March 16, 1949.

Dr. Edward J. Hehre,
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1300 York Avenue,
New York 21. N. Y.

Dear Dr. Hehre,

Thank you for the reprints.

In response to your request, I am enclosing two strains of E. coli which produce amylomaltase when grown on maltose substrates. "ML" is a coli-mutabile which is described by Monod in his announcement of this enzyme in Comptes Rendus. "K-12" is our wild type E. coli strain which we have used for our genetic work. Both these cultures ferment glucose quite rapidly, so that the phenomenon of "direct fermentation" of maltose is not apparent in them. For the accumulation of polysaccharide, Doudoroff has found cells dried at room temperature over P_2O_5 to be quite satisfactory. Maltose is polymerized by such preparations in the absence of phosphate. There is also a phosphorylase which establishes an equilibrium between polysaccharide and glucose-1-phosphate. The most polymerized polysaccharide is produced from G-1-P. or from maltose under conditions providing a sink for the glucose which is split off. Monod has used glucose oxidase (notatine) very elegantly for this purpose.

Doudoroff et al have a paper in press now detailing the enzyme in K-12.

Yours very sincerely,

Joshua Lederberg.